

LED-LDR Blinker

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It normally takes two transistors to build a blinker circuit (in order to make positive feedback possible). However, you can also use a photoresistor (LDR) that is illuminated by an LED. The feedback takes place here by means of light rays.

The circuit is easy to understand. When light falls on the LDR, the current increases. The capacitor then charges, and this increases the base current. This causes the transistor to switch the LED fully on. The stable 'on' state switches to the 'off' state as soon as the capacitor is fully charged. The LED is then completely off, the base voltage goes negative and the transistor is cut off. The circuit cannot switch back to the 'on' state until the capacitor has been discharged via the base resistor.

The circuit naturally reacts to external light sources as well.

You will have to test it in different light environments to see whether it will work. In any case, it will not work in full sunlight. With an ultrabright LED and a very low-resistance LDR, it might be possible to build a blinker without using a transistor. The combination of the LED and the LDR would have to provide the gain that is needed to produce oscillations.

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